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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/777,742	02/12/2004	William Preston Alexander III	AUS920030821US1	5609

35525 7590 06/18/2007
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EXAMINER

ROMANO, JOHN J

ART UNIT	PAPER NUMBER
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2192

MAIL DATE	DELIVERY MODE
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06/18/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/777,742	Applicant(s) ALEXANDER ET AL.	
	Examiner John J. Romano	Art Unit 2192	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 February 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|-----------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims **1-23** are pending in this action.

Information Disclosure Statement

1. The Information Disclosure Statement filed on 2/12/2004 has been considered.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

The examiner notes particularly, the drawing objections below. In many cases, if the drawings are correct than the specification would have to be adjusted (rather than the drawings)+

For example, the "CUM" value in Figures 9A and 14A. Appropriate corrections are required.

Drawings

3. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they do not include the following reference sign(s) mentioned in the description:

Page 34, line 2 -- "1010".

Page 34, line 5 – “1020”

Page 36, line 9 – “Figure 11 – field “1130”

Page 36, last paragraph – Figure 10 references not labeled.

Page 37, second paragraph, Figure 11, references “1120” and “1130”

Page 48, “1670”

4. The drawings are objected to because the values of Figure 9A, 14A and 14C appear incorrect. For example, Figure 9A, Node A, it appears the “CUM” value should be 22. Otherwise, it appears the “CUM” value of node A in Figure 9B should be 24. In any case there seems to be an inconsistency with the computation of the node A, “CUM” value between 9A and 9B. Please clarify or perform appropriate correction.

Similarly, Figures 14A and 14B have an inconsistent summation of the “CUM” value of the respective node A.

Also, Figure 14C is specified as 3 runs of the program data structure of 14B and 1 run of the program data structure of 14A. Accordingly, it seems the CUM value should be consistent with $3 \times (21) + 1 \times (22) = 84$. Note, that even if 25 is substituted in Figure 14A the sum would be 87. In any case, there again appears to be inconsistency. Please advise.

Figure 16, is a flowchart outlining the subtraction process rather than the averaging process disclosed in the specification.

The examiner requests the Applicant to please review the drawings and check for any other missing labels or inconsistencies that may not be listed here.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 101

35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

5. Claims **9-16** are rejected under 35 U.S.C. 101 because the claimed invention is directed to non-statutory subject matter.
1. In regard to independent claim **9**, the specification refers to a "computer readable medium" both statutory and non-statutory computer readable mediums. Specifically,

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the specification defines "computer readable medium" as comprising "signal bearing media" comprising transmission media (See specification, page 55, last paragraph – page 56, first paragraph). A product is a tangible physical article or object, some form of matter, which a signal is not. A signal, a form of energy, does not fall within either of the two definitions of manufacture. Thus a signal does not fall within any of the four statutory classes of 101. See Interim Guidelines for Examination of Patent Applications for Patent Subject Matter Eligibility, Annex IV (c), (signed 26, October, 2005) – OG Cite: 1300 OG 142. Retrieve on <<http://www.upsto.gov/web/offices/com/sol/og/2005/week47/patgupa.htm>>.

Additionally, a program product with recordable medium is not necessary yet to be a computer readable medium and recorded/stored with executable instructions.

Accordingly, claims **10-16** are rejected for not further limiting to cure the deficiencies addressed above in the rejected base claim. Appropriate correction is required.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

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6. Claims **1, 4, 7, 9, 12, 15, 17, 20** and **23** are rejected under 35 U.S.C. 103(a) as being unpatentable over Cohen et al., US 6,011,918 (art made of record & hereinafter **Cohen**) in view of Kazi et al., "JaViz: A client/server Java profiling tool" (art made of record & hereinafter **Kazi**).

In regard to claim **1**, **Cohen** discloses:

- *"A method, in a data processing system, for averaging out variations in trace data obtained from a plurality of executions of a computer program..."* (E.g., see Figure 5 & Column 12, lines 25-28), wherein each detailed trace file is analyzed to gathered in the merge step, comprising average execution time for each method.
- *"...obtaining call tree data structures corresponding to the trace data for the plurality of executions of the computer program..."* (E.g., see Figure 8 & Column 10, lines 46-51), wherein call graphs with weighted nodes are disclosed.
- *"...adding the call tree data structures to generate an added call tree data structure; calculating an average of values associated with each node in the added call tree data structure to generate an averaged call tree data structure..."* (E.g., see Figure 5 & Column 12, lines 25-28), wherein profiles are collected for multiple runs and the results associated with each node of the call tree are averaged. It is also noted that the generated added call tree data structure, although not expressly disclosed or displayed, must be created in order to compute

the average. The averaging of a metric for a respective node, is in a hierarchical structure, even if in intermediate textual format, and necessarily added and divided to obtain the average of the particular metric.

But **Cohen** does not expressly disclose "*...the affect of variations in trace data of various executions of the computer program are minimized in the averaged call tree data structure*". However, **Kazi** discloses:

- "*...and outputting the averaged call tree data structure, wherein the affect of variations in trace data of various executions of the computer program are minimized in the averaged call tree data structure.*" (E.g., see Table 1 & page 100, "Run-time statistics generation"), wherein to facilitate the performance analysis of the call graph, statistical information is averaged (execution times) and the standard deviation for each method, thereby minimizing the display for each execution.

Cohen and **Kazi** are analogous art because they are both concerned with the same field of endeavor, namely, a distributed application profiling tool. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine **Kazi's** averaging minimization with **Cohen's** profiling method. The motivation to do so would have been to discover the amount of time spent in certain methods as disclosed by Kazi (See page 96, "Inefficient methods") to analyze the performance of the java application program.

In regard to claim 4, the rejections of base claim 1 are incorporated.

Furthermore, **Kazi** discloses:

- "...walking a second call tree data structure over the first call tree data structure to generate the added call tree data structures." (E.g., see Table 1 (Column 12) & Column 1:38-41), wherein traversing (walking) the nodes to gather the pertinent information is disclosed.

In regard to claim 7, see claim 1.

In regard to claims 9, 12 and 15, this is a program in a computer readable medium version of the claimed method discussed above, in claims 1, 4 and 7, wherein all claimed limitations have also been addressed and/or cited as set forth above.

In regard to claims 17, 20 and 23, this is an apparatus version of the claimed method discussed above, in claims 1, 4 and 7, wherein all claimed limitations have also been addressed and/or cited as set forth above.

Claims 2-3, 5-6, 8, 10-11, 13-14, 16, 18-19 and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Cohen** in view of **Kazi** and in further view of Alexander et al., "A unifying approach to performance analysis in the Java environment" (art of record & hereinafter **Alexander**).

In regard to claim 2, the rejections of base claim 1 are incorporated. **Cohen** and **Kazi** do not expressly disclose "...inputting the trace data to an arcflow tool, wherein the arcflow tool generates the call tree data structures based on the trace data.". However, **Alexander** discloses:

- "...inputting the trace data to an arcflow tool, wherein the arcflow tool generates the call tree data structures based on the trace data." (E.g., see Figure 4 & page 125, "Building the arcflow model"), wherein the arcflow tool is disclosed.

Cohen, Kazi and Alexander are analogous art because they are both concerned with the same field of endeavor, namely, a distributed application profiling tool.

Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to combine **Alexander's** arcflow tool with **Cohen and Kazi's** profiling method. The motivation to do so would have been to allow users to view callstack trees graphically and cross-reference the various x-files to enhance the value of arcflow as disclosed by **Alexander** (See page 131, "Future work").

In regard to claim 3, the rejections of base claim 1 are incorporated. **Cohen and Kazi** do not expressly disclose "...the call tree data structures are xtree data structures.". However, **Alexander** discloses:

- "...the call tree data structures are xtree data structures." (E.g., see Figure 4 & page 125, "The xtree report"), wherein the xtree report is disclosed.

In regard to claim 5, the rejections of base claim 4 are incorporated. **Cohen** teaches the adding of values associated with each node as disclosed above with relation to claim 1. However, **Cohen and Kazi** do not expressly disclose "...adding a base value of the node in the second call tree data structure to a base value of a corresponding node in the first call tree data structure." However, **Alexander** discloses:

- "...a base value...." (E.g., see page 124, first paragraph), wherein the base, calls and cum values are disclosed.

Therefore, it would have been obvious to add the base value of the second node tree data structure to a base value of a corresponding node in the first tree data structure to generate the average for each node metric as disclosed above.

In regard to claim 6, the rejections of base claim 4 are incorporated. But **Cohen** and **Kazi** do not expressly disclose "...for each node that exists in only one of the first call tree data structure and the second call tree data structure, creating a node in the added call tree data structure having a base value corresponding to the base value of the node that exists in either of the first call tree data structure or the second call tree data structure.". However, it would have been an inherent result of the averaging computation if a value only existed for one node.

In regard to claim 8, the rejections of base claim 1 are incorporated. But **Cohen** and **Kazi** do not expressly disclose "...wherein the values associated with each node include a base value, a number of calls, a cumulative value, and an absolute cumulative value.". However, **Alexander** discloses:

- "...wherein the values associated with each node include a base value, a number of calls, a cumulative value, and an absolute cumulative value." (E.g., see page 124, first paragraph), wherein the base, calls and cum values are disclosed.

In regard to claims 10-11, 13-14 and 16, this is a program in a computer readable medium version of the claimed method discussed above, in claims 2-3, 5-6 and 8,

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wherein all claimed limitations have also been addressed and/or cited as set forth above.

In regard to claims **18-19** and **21-22**, this is an apparatus version of the claimed method discussed above, in claims **2-3** and **5-6**, wherein all claimed limitations have also been addressed and/or cited as set forth above.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

- Kaneshiro et al., US 5,950,003, wherein averaging each node to summarize the profile data is disclosed (See Column 21, lines 39-50).
- Berry et al., US 6,904,594, wherein adding changes (from a first node metric) to a second node is taught (See Figure 22, 2208).

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John J. Romano whose telephone number is (571) 272-3872. The examiner can normally be reached on 8-5:30, M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tuan Q. Dam can be reached on (571) 272-3695. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JJR

A handwritten signature in black ink, appearing to read 'Tuan Dam', with a long horizontal flourish extending to the right.

TUAN DAM
SUPERVISORY PATENT EXAMINER